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# RADIUM MONITORING NETWORK.
# DATA RELEASE NUMBER 11

PUBLIC HEALTH SERVICE
DENVER, COLORADO

JULY 1967

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## DATA RELEASE NO. 11

U. S. DEPARTMENT OF THE INTERIOR
FEDERAL WATER POLLUTION CONTROL ADMINISTRATION
COLORADO RIVER BASIN WATER QUALITY CONTROL PROJECT
DENVER, COLORADO

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16. Abstracts
In this eleventh data release report, radium-226 and uranium results are presented that supplement data from 10 previous reports dated October 1962 through January 1967. The tabular data indicate evidence of uranium mining and milling from analysis of composite water samples at stations of the Radium Monitoring Network of the Colorado River Basin Water Quality Control Project. The network is a surveillance system consisting of continuous surface water sampling at 27 locations throughout the basin. It assays the radiological content of river water over the entire basin.

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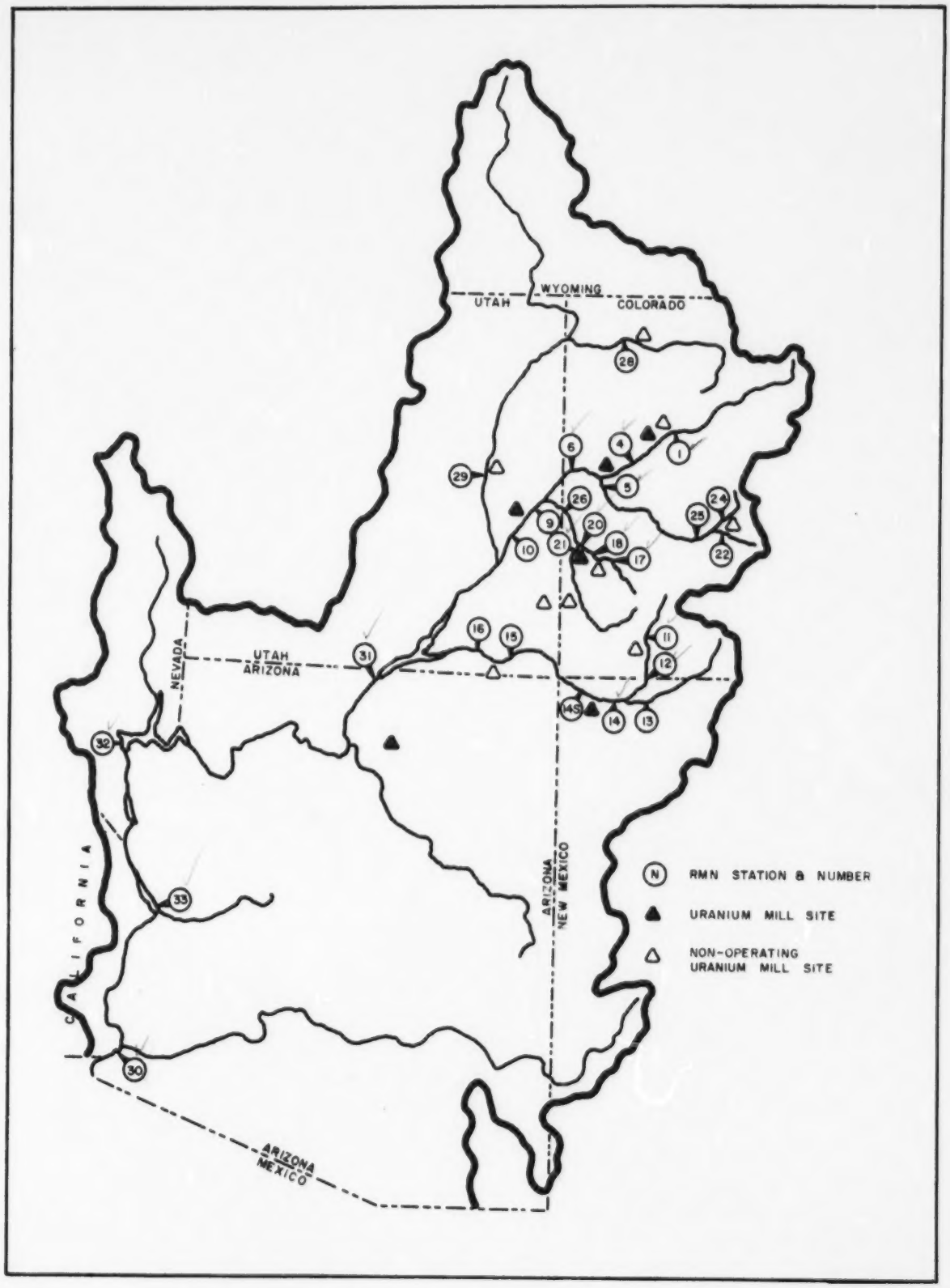


GPO 851-409

COLORADO RIVER BASIN RADIUM MONITORING NETWORK

COLORADO RIVER BASIN WATER QUALITY CONTROL PROJECT

RADIUM MONITORING NETWORK DATA RELEASE NO. 11

## INTRODUCTION

This is the eleventh release of data collected through the Radium Monitoring Network, which is maintained by the Colorado River Basin Water Quality Control Project, Federal Water Pollution Control Administration. The purpose of this release is to supplement data given in the ten previous releases dated October 1962 through January 1967.

A summary report of Radium Monitoring Network data collected through December 1963 was published in the November 1964 edition of Radiological Health Data, copies of which are now available through Colorado River Basin Water Quality Control Project Headquarters. A similar report of data collected through December 1964 was published in the November 1965 edition of the same periodical and reprints are available through the U. S. Government Printing Office.

The Radium Monitoring Network is a surface water surveillance system consisting currently of twenty-one sampling stations located on various streams and reservoirs throughout the Colorado River Basin. During initial stages of the surveillance program, the system consisted of twenty-seven sampling stations. The purpose of the network is to provide continuous monitoring of radioactivity concentrations of Basin surface water so that the contribution from uranium mining and milling industry waste discharges can be determined. Samples are analyzed for radium-226, uranium, gross alpha, gross beta, thorium alpha, lead-210, and strontium-90 to provide a comprehensive picture of contributions of radiological contaminants to surface waters of the Colorado River Basin by the uranium industry and by fallout from the testing of weapons.

## SAMPLING PROCEDURES

Depending on individual station parameters, Radium Monitoring Network (RMN) samples are collected as either automatic or grab samples. Grab samples are collected once or three times per week and automatic samplers collected 21-ml. portions every hour. The samples are sent as collected to the Colorado River Basin Water Quality Control Project Laboratory where they are composited and filtered through 0.45-micron membrane filters as soon as possible after the samples for the compositing period are received. After

filtration, samples are acidified with 2% by volume of 12 N HCl and radiochemical determinations are then performed on the filtered water.

## SIGNIFICANT FIGURES

In this release, a convention affecting the significant figures reported has been adopted. After a careful consideration of the accuracies and precisions involved in the various analytical procedures, it was decided to report data to two significant figures except in those instances where the lower limit of detection was being approached. In the latter instances, only one significant figure is reported. The last significant figure is an estimate.

In averages, three figures are retained if the precision and significance of the averaged data justify such retention. Thus, the overall averages for radium-226 at stations 11 and 26 are reported, respectively, as 0.05 and 1.13 picograms per liter.

## RESULTS

The Appendix contains the dissolved radium-226 and uranium data collected since the tenth data release and a summary of all radium-226 and uranium data collected to date is given in Table 1. Gross alpha, gross beta, lead-210, thorium alpha, and strontium-90 data on samples collected through June 1966 were reported in Data Releases Nos. 7, 8, and 10; additional data on these parameters for the period July 1966 through December 1966 are presented in this release.

Radium-226 and uranium concentrations at most stations continue to average well below recommended maximum concentrations. The Dolores River at Gateway, Colorado, and the San Miguel River below Uravan, Colorado, now carry overall average radium-226 concentrations of one picogram per liter or higher. Radium-226 concentrations at eleven stations deviated enough from the long-time average to warrant special notice.

The average radium-226 concentration in the Colorado River at Silt, Colorado, for this reporting period was 0.28 picocuries per liter as compared with the long-time average of 0.20 picocuries per liter. Noticeable decreases in average concentrations of radium-226, as compared to the long-time averages, were observed on samples from the Colorado River at Page, Arizona; the San Miguel River above Uravan, Colorado; the Animas River at the New Mexico-Colorado state line; and the San Juan River both above and below Mexican Hat, Utah. All five of these stations averaged no more than 0.12 picogram radium-226 per liter for the current reporting period.

During the current reporting period, half the samples from the Colorado River below Moab, Utah, contained radium-226 in excess of 1.0 picogram per liter with an average for all six samples of 1.08 picograms per liter. There was no noticeable increase in radium-226 concentration at the station just above Moab. Elevated radium-226 concentrations have occurred below Moab spasmodically in the past, but the frequency of such occurrences has increased sharply within the current reporting period. Somewhat elevated uranium concentrations accompanied the elevated radium-226 concentrations indicating pollution from the mill at Moab.

The average radium-226 concentration for the San Miguel River below Uravan, Colorado, was 3.77 picocuries per liter for the current reporting period as compared to a long-time average of 1.04 picocuries per liter. Of twenty-one samples analyzed, not one contained less than 1.0 picogram radium-226 per liter. In fact, no sample since August 22, 1966, has contained less than 1.0 picogram radium-226 per liter. The higher concentrations of radium-226, accompanied by higher concentrations of uranium, are attributable to waste discharges from the mill at Uravan, Colorado.

The average radium-226 concentration in the Dolores River at Gateway, Colorado, was 1.96 picograms per liter for the current reporting period as compared to a long-time average of 1.13 picograms per liter. The elevated radium concentrations were accompanied by elevated uranium concentrations and both are attributable primarily to waste discharges from the mill at Uravan, Colorado.

In Data Release No. 9, attention was called to an elevation in the average radium-226 concentration in Lake Mead as compared to the long-time average. While an intensive program of sampling and re-analysis of samples, reported in Data Release No. 10, indicated that the elevation was probably real, the new data showed slight decreases in the radium concentration. The radium-226 concentration in Lake Mead for the current reporting period averaged 0.36 picogram per liter which is 0.01 picogram per liter below the long-time average and is identical with the average concentration in Lake Havasu for the same period.

Results of radiochemical analyses of quarterly composites of samples from selected stations of the Radium Monitoring Network are given in Table 2. The composited samples were analyzed for gross alpha activity, gross beta activity, strontium-90, thorium (alpha-emitting), lead-210, and polonium-210. Most of the concentrations given for thorium, lead-210, and polonium-210 are near "background" levels or lower limits of detection and do not warrant comment. The

dissolved thorium concentrations of 1.0 and 1.5 picocuries per liter at the station below Uravan, Colorado, are noticeably higher than concentrations observed at other stations but are not high enough to be of any concern. The strontium-90 concentrations vary with the quarter and station, but are well below accepted standards.

The dissolved alpha activity below Uravan, Colorado, on the San Miguel River and above and below Moab, Utah, on the Colorado River are noticeably higher than at other stations. The alpha activities below Moab are somewhat higher than those above Moab indicating some pollution between the two locations. The dissolved beta activities are also higher at the same three stations. Equally high beta activities were observed during the first quarter period in samples from the San Juan River above and below Mexican Hat, Utah. Since no increase was observed in the alpha activity between these two stations, it is likely that the high beta activities are not associated with pollution from former uranium mill operations at Mexican Hat.

TABLE 1

RADIUM-226 AND URANIUM CONCENTRATIONS IN SURFACE WATERS OF THE COLORADO RIVER BASIN

| Station Number and Location | Radium-226 Av.[a] pg/l | Radium-226 Range pg/l | Radium-226 No. of Analyses | Uranium Av.[a] µg/l | Uranium Range µg/l | Uranium No. of Analyses |
|---|---|---|---|---|---|---|
| **Animas River** | | | | | | |
| 11 above Durango, Colorado | 0.05 | 0.00-0.11 | 62 | 1.2 | 0.1-2.9 | 56 |
| 12 Colorado-New Mexico State Line | 0.25 | 0.03-1.5 | 114 | 3.3 | 0.0-18 | 71 |
| **Colorado River** | | | | | | |
| 1 at Silt, Colorado | 0.20 | 0.04-0.39 | 67 | 3.2 | 0.0-4.4 | 53 |
| 4 at DeBeque, Colorado | 0.19 | 0.05-0.44 | 68 | 3.5 | 0.4-7.2 | 53 |
| 6 at Fruita, Colorado | 0.18 | 0.09-0.40 | 62 | 8.6 | 2.0-14 | 53 |
| 9 above Moab, Utah | 0.26 | 0.10-0.50 | 96 | 9.8 | 2.4-31 | 83 |
| 10 below Moab, Utah | 0.44 | 0.16-7.2 | 92 | 11 | 3.0-22 | 79 |
| 31 at Page, Arizona | 0.20 | 0.05-0.36 | 42 | 6.8 | 2.8-13 | 43 |
| 32 Lake Mead | 0.37 | 0.21-0.60 | 48 | 8.2 | 5.0-11 | 48 |
| 33 Lake Havasu | 0.36 | 0.26-0.44 | 50 | 8.0 | 5.4-11 | 50 |
| 30 at Yuma, Arizona | 0.17 | 0.06-0.33 | 58 | 7.8 | 2.0-11 | 53 |
| **Dolores River** | | | | | | |
| 21 at Bedrock, Colorado | 0.44 | 0.03-1.4 | 65 | 10 | 0.1-35 | 52 |
| 26 at Gateway, Colorado | 1.13 | 0.04-3.3 | 105 | 15 | 0.1-51 | 82 |
| **Green River** | | | | | | |
| 28 below Maybell, Colorado | 0.09 | 0.03-0.15 | 36 | 2.7 | 0.6-8.0 | 32 |
| 29 below Green River, Utah | 0.09 | 0.05-0.15 | 29 | 5.0 | 1.6-7.6 | 26 |

TABLE 1(Contd)

RADIUM-226 AND URANIUM CONCENTRATIONS IN SURFACE WATERS OF THE COLORADO RIVER BASIN

| Station Number and Location | Radium-226 Av.[a] pg/l | Radium-226 Range pg/l | Radium-226 No. of Analyses | Uranium Av.[a] µg/l | Uranium Range µg/l | Uranium No. of Analyses |
|---|---|---|---|---|---|---|
| **Gunnison River** | | | | | | |
| 24 above Gunnison, Colorado | 0.04 | 0.01-0.08 | 43 | 1.2 | 0.0-2.6 | 33 |
| 25 below Gunnison, Colorado | 0.04 | 0.01-0.09 | 46 | 2.3 | 0.4-4.3 | 33 |
| 5 at Grand Junction, Colorado | 0.09 | 0.01-0.30 | 59 | 10 | 0.7-19 | 53 |
| **San Juan River** | | | | | | |
| 13 above Farmington, N. M. | 0.07 | 0.03-0.16 | 20 | 2.8 | 0.0-8.3 | 19 |
| 14 below Farmington, N. M . | 0.08 | 0.03-0.21 | 55 | 2.8 | 0.3-9.0 | 54 |
| 14S below Shiprock, N. M. | 0.08 | 0.03-0.28 | 165 | 9.1 | 0.1-93 | 161 |
| 15 above Mexican Hat, Utah | 0.12 | 0.04-0.66 | 61 | 6.3 | 1.4-23 | 48 |
| 16 below Mexican Hat, Utah | 0.12 | 0.01-0.84 | 139 | 8.8 | 0.8-35 | 121 |
| **San Miguel River** | | | | | | |
| 17 above Naturita, Colorado | 0.04 | 0.00-0.14 | 81 | 1.9 | 0.0-6.5 | 53 |
| 18 above Uravan, Colorado | 0.22 | 0.03-1.2 | 114 | 6.0 | 0.8-63 | 83 |
| 20 below Uravan, Colorado | 1.04 | 0.06-25 | 257 | 24 | 0.0-150 | 229 |

a Average concentration obtained from all data presented in this and previous data releases.

TABLE 2

RADIOCHEMICAL ANALYSIS OF QUARTERLY COMPOSITE RMN WATER SAMPLES

| Station Number and Location | Quarter Period 1/ | Gross α pc/l | Gross β pc/l | Sr-90 pc/l | Th (α) pc/l | Pb-210 pc/l | Po-210 pc/l | Date of Po-210 Determination |
|---|---|---|---|---|---|---|---|---|
| RMN 4 | | | | | | | | |
| Colorado River at DeBeque, Colorado | 1 | 3.3 | 9.0 | 0.8 | n.d. | n.d. | n.d. | -- |
| | 2 | 4.6 | 8.4 | 0.4 | n.d. | n.d. | n.d. | -- |
| RMN 9 | | | | | | | | |
| Colorado River above Moab, Utah | 1 | 10 | 18 | 1.6 | n.d. | n.d. | n.d. | -- |
| | 2 | 10 | 15 | 0.9 | n.d. | n.d. | n.d. | -- |
| RMN 10 | | | | | | | | |
| Colorado River below Moab, Utah | 1 | 13 | 18 | n.d. | 0.1 | 0.1 | 0.10 | 12/23/66 |
| | 2 | 17 | 14 | n.d. | 0.1 | 0.1 | 0.27 | 2/13/67 |
| RMN 15 | | | | | | | | |
| San Juan River above Mexican Hat, Utah | 1 | 7.0 | 17 | 3.1 | n.d. | n.d. | n.d. | -- |
| | 2 | 5.5 | 9.7 | 1.2 | n.d. | n.d. | n.d. | -- |
| RMN 16 | | | | | | | | |
| San Juan River below Mexican Hat, Utah | 1 | 5.3 | 17 | n.d. | 0.1 | 0.1 | 0.03 | 12/23/66 |
| | 2 | 4.7 | 6.8 | n.d. | 0.1 | 0.2 | 0.01 | 2/13/67 |

TABLE 2(Contd)

RADIOCHEMICAL ANALYSIS OF QUARTERLY COMPOSITE RMN WATER SAMPLES

| Station Number and Location | Quarter Period 1/ | Gross α pc/l | Gross β pc/l | Sr-90 pc/l | Th (α) pc/l | Pb-210 pc/l | Po-210 pc/l | Date of Po-210 Determination |
|---|---|---|---|---|---|---|---|---|
| RMN 20 | | | | | | | | |
| San Miguel River | 1 | 30 | 35 | n.d. | 1.5 | 0.1 | 0.06 | 12/23/66 |
| below Uravan, Colorado | 2 | 40 | 24 | n.d. | 1.0 | 0.0 | 0.18 | 2/13/67 |

1/ Quarter Period

1 July 1966-September 1966
2 October 1966-December 1966

# APPENDIX

Results of Radium-226 and Uranium Analyses of Samples
from Individual Radium Monitoring Network Stations
for Current Reporting Period

RMN Station 1: Colorado River at Silt, Colorado
Started: November 25, 1961
Type: Automatic Pump-Timer

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| October 1-October 29 | 0.25 | 2.9 |
| October 29-December 3 | 0.28 | 2.9 |
| December 3-December 30 | 0.30 | 3.2 |
| 1967 | | |
| December 30-January 28 | 0.29 | 3.2 |
| February 4-February 25 | 0.26 | 3.1 |

RMN Station 4: Colorado River above DeBeque, Colorado
Started: November 12, 1961
Type: Automatic Pump-Timer

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| October 1-October 29 | 0.21 | 3.3 |
| October 29-December 3 | 0.23 | 3.3 |
| December 3-December 30 | 0.23 | 4.3 |
| 1967 | | |
| December 30-January 28 | 0.26 | 4.4 |
| February 4-February 25 | 0.21 | 5.9 |

RMN Station 5: Gunnison River above Grand Junction, Colorado
Started: April 16, 1962
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| September 5-September 30 | 0.12 | 14 |
| October 3-October 28 | 0.11 | 14 |
| October 31-December 2 | 0.05 | 5.4 |
| December 5-December 30 | 0.08 | 12 |
| **1967** | | |
| January 2-January 27 | 0.04 | 15 |
| January 30-February 24 | 0.09 | 11 |

RMN Station 6: Colorado River near Fruita, Colorado
Started: April 16, 1962
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| October 3-October 28 | 0.16 | 12 |
| October 31-December 2 | 0.18 | 10 |
| December 5-December 30 | 0.16 | 9.4 |
| 1967 | | |
| January 2-January 27 | 0.16 | 9.5 |
| January 30-February 24 | 0.16 | 9.0 |

RMN Station 9: Colorado River above Moab, Utah
Started: December 11, 1961
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| September 5-September 30 | 0.24 | 12 |
| October 3-October 28 | 0.26 | 12 |
| October 31-December 2 | 0.21 | 11 |
| December 5-December 29 | 0.21 | 11 |
| **1967** | | |
| January 2-January 27 | 0.31 | 11 |
| January 30-February 24 | 0.25 | 11 |

RMN Station 10: Colorado River below Moab, Utah
Started: December 11, 1961
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| September 5-September 30 | 0.28 | 12 |
| October 3-October 28 | 0.28 | 15 |
| October 31-December 2 | 0.23 | 13 |
| December 5-December 29 | 1.5 | 15 |
| **1967** | | |
| January 2-January 27 | 3.0 | 16 |
| January 30-February 24 | 1.2 | 14 |

RMN Station 11: Animas River at Durango, Colorado
Started: July 17, 1961
Type: One grab sample per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| September 1966 | 0.06 | 0.8 |
| October 1966 | 0.06 | 2.9 |
| November 1966 | 0.05 | 1.1 |
| December 1966 | 0.05 | 0.7 |
| 1967 | | |
| January 1967 | 0.05 | 1.4 |
| February 6-February 24 | 0.05 | 1.2 |

RMN Station 12: Animas River at Colorado-New Mexico State Line
Started: January 19, 1961
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| September 3-September 28 | 0.14 | 1.8 |
| September 30-October 31 | 0.10 | 3.6 |
| November 2-December 2 | 0.08 | 1.4 |
| December 5-December 31 | 0.06 | 2.2 |
| **1967** | | |
| January 3-January 27 | 0.09 | 2.5 |
| January 31-February 25 | 0.08 | 1.9 |

RMN Station 14: San Juan River at Fruitland, New Mexico
Started: August 1, 1962
Type: One grab sample per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| September 5-September 26 | 0.09 | 1.5 |
| October 3-October 24 | 0.04 | 1.6 |
| October 31-November 14 | 0.04 | 2.3 |
| December 5-December 19 | 0.05 | 2.6 |
| December 26 | 0.04 | 6.1 |
| **1967** | | |
| January 2-January 23 | 0.05 | 2.1 |
| January 30-February 20 | 0.04 | 3.1 |

RMN Station 14S: San Juan River below Shiprock, New Mexico
Started: August 7, 1962
Type: One grab sample per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| August 15 | 0.10 | 4.6 |
| August 22 | 0.05 | 3.0 |

RMN Station 15: San Juan River above Mexican Hat, Utah
Started: December 11, 1961
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| October 2-October 27 | 0.09 | 3.0 |
| October 30-December 1 | 0.09 | 2.9 |
| December 4-December 31 | 0.08 | 5.8 |
| **1967** | | |
| December 29-January 3 | 0.05 | 6.3 |
| February 1-February 26 | 0.05 | 6.6 |

RMN Station 16: San Juan River below Mexican Hat, Utah
Started: December 11, 1961
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| October 2-October 27 | 0.09 | 3.5 |
| October 30-December 1 | 0.06 | 3.5 |
| December 4-December 31 | 0.05 | 5.7 |
| **1967** | | |
| December 29-January 22 | 0.08 | 5.2 |
| February 1-February 26 | 0.05 | 4.4 |

RMN Station 17: San Miguel River above Naturita, Colorado
Started: October 28, 1961
Type: One grab sample per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| October 3-October 24 | 0.06 | 1.7 |
| October 31-November 28 | 0.04 | 2.9 |
| December 5-December 26 | 0.03 | 2.4 |
| **1967** | | |
| January 2-January 23 | 0.04 | 2.7 |
| January 30-Feburary 20 | 0.06 | 5.0 |

RMN Station 18: San Miguel River above Uravan, Colorado
Started: October 27, 1961
Type: Automatic Pump-Timer

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| October 3-October 31 | 0.10 | 3.7 |
| October 31-December 5 | 0.08 | 2.9 |
| December 5-January 2 | 0.10 | 5.9 |
| 1967 | | |
| January 2-January 30 | 0.09 | 4.7 |
| January 30-February 27 | 0.09 | 5.0 |

RMN Station 20: San Miguel River below Uravan, Colorado
Started: October 9, 1961
Type: Automatic Pump-Timer

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| October 3-October 10 | 1.7 | 8.4 |
| October 10-October 17 | 1.5 | 6.7 |
| October 17-October 24 | 4.4 | 3.6 |
| October 24-October 31 | 2.1 | 2.7 |
| October 31-November 7 | 1.2 | 0.7 |
| November 7-November 14 | 10 | 32 |
| November 14-November 21 | 3.3 | 27 |
| November 21-November 28 | 1.0 | 5.4 |
| November 28-December 5 | 25 | 60 |
| December 5-December 12 | 3.4 | 28 |
| December 12-December 19 | 2.6 | 57 |
| December 19-December 26 | 2.1 | 91 |
| December 26-January 2 | 1.0 | 4.0 |
| **1967** | | |
| January 2-January 9 | 2.3 | 5.4 |
| January 9-January 16 | 1.3 | 3.7 |
| January 16-January 23 | 2.1 | 8.1 |
| January 23-January 30 | 1.5 | 17 |
| January 30-February 6 | 2.0 | 16 |
| February 6-February 13 | 2.1 | 6.0 |
| February 13-February 20 | 4.2 | 3.0 |
| February 20-February 27 | 4.3 | 8.4 |

RMN Station 21: Dolores River at Bedrock, Colorado
Started: October 30, 1961
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| September 5-September 30 | 0.55 | 12 |
| October 3-October 28 | 0.45 | 12 |
| October 31-December 2 | 0.36 | 13 |
| December 5-December 30 | 0.41 | 12 |
| **1967** | | |
| January 2-January 28 | 0.54 | 7.0 |

RMN Station 26: Dolores River at Gateway, Colorado
Started: October 30, 1961
Type: Three grab samples per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| October 3-October 28 | 2.4 | 41 |
| October 31-December 2 | 2.0 | 45 |
| December 5-December 30 | 1.4 | 34 |
| 1967 | | |
| January 2-January 28 | 1.7 | 28 |
| January 30-February 24 | 2.3 | 29 |

RMN Station 30: Colorado River at U. S.-Mexican Border
Started: July 30, 1962
Type: One grab sample per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| October 3-October 28 | 0.14 | 4.3 |
| October 31-December 2 | 0.13 | 3.5 |
| December 5-December 30 | 0.14 | 5.0 |
| **1967** | | |
| January 3-January 27 | 0.16 | 2.0 |
| January 30-February 24 | 0.15 | 5.9 |

RMN Station 31: Colorado River at Page, Arizona
Started: May 1, 1963
Type: 300-ml. composite per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| **1966** | | |
| September 26 | 0.14 | 3.9 |
| October 3-October 10 | 0.13 | 3.7 |
| November | No Sample | |
| December 2 | * | 4.5 |
| **1967** | | |
| January 13 | 0.10 | 5.2 |

* Insufficient sample for radium determination.

RMN Station 32: Colorado River at (Lake Mead) Boulder City, Nevada
Started: March 11, 1963
Type: One grab sample per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| October 3-October 24 | 0.41 | 6.0 |
| October 31-November 28 | 0.36 | 5.0 |
| December 5-December 27 | 0.25 | 5.0 |
| 1967 | | |
| January 3-January 23 | 0.41 | 6.7 |
| January 30-February 20 | 0.35 | 7.1 |

RMN Station 33: Colorado River at Metropolitan Water District Intake, Lake Havasu, California-Arizona
Started: January 7, 1963
Type: One grab sample per week

| Date | Radium-226 pg/liter | Uranium µg/liter |
|---|---|---|
| 1966 | | |
| October 3-October 17 | 0.40 | 6.6 |
| November 7-November 29 | 0.34 | 5.4 |
| December 5-December 19 | 0.36 | 7.6 |
| 1967 | | |
| January 16 | 0.29 | 7.5 |
| February 6-February 27 | 0.40 | 7.2 |